

Questions and Answers Related to Testimony of EPA Administrator before the Committee on Environment and Public Works May 18, 20010

Background on EPA's Oil Response Program

Does EPA have a role in regulation of oil rigs located inland?

Yes. Per Executive Order 12777, EPA, DOI-MMS, and DOT have agreed that EPA responsibility extends to non-transportation-related offshore facilities that are landward of the coast line (e.g. in inland lakes and rivers (see 40 CFR 112, Appendix B)). These facilities must comply with the Oil Spill Prevention Control and Countermeasure (SPCC) requirements under 40 CFR 112 (including the specific requirements for offshore oil drilling, production or work over facilities in 112.11) and may also be required to prepare and submit to EPA spill response plans under the Oil Pollution Act at section 311(j)(5)(C).

EPA's Response

When did EPA start monitoring air quality in the Gulf states?

EPA responders were on the ground with portable monitoring devices starting on April 28th. EPA's twin engine aircraft, ASPECT, was deployed on April 29th to collect air sampling data and provide aerial photographs of the migrating oil slick. EPA began oil spill specific air monitoring from our TAGA buses on April 30th.

We began water sampling on April 30th and results from water sampling are typically available four days after sample collection. We began coastal sediment sampling on April 30th, and we expect to get results from these samples in the next few days. EPA is closely coordinating with the air monitoring efforts ongoing in the states of Louisiana, Mississippi, Alabama and Florida.

Why is EPA monitoring and sampling the air?

We are sampling the air for vapors that may evaporate from the water/oil mixture in the Gulf as well as for particulate matter that may result from the smoke generated by the controlled burns when they take place. We are tracking the levels of particulate matter and Volatile Organic Compounds chemicals closely.

What is causing the odors that have been reported in the Gulf area?

The odor contains the same chemicals as the gas used to fill cars. These chemicals are classified as Volatile Organic Compounds (VOCs), specifically: benzene, toluene, ethylbenzene, xylene and naphthalene. These VOCs can be smelled at levels well below those that would cause health problems.

What is EPA doing to monitor the air?

EPA is working around the clock to monitor air quality and keep communities informed. There are currently five active air monitoring systems stationed along the Gulf Coast.

1. EPA has brought in two mobile air monitoring buses equipped with Trace Atmospheric Gas Analyzers, or TAGAs, for instant-result air monitoring. The TAGA Vans will be monitoring the odors as well as other volatile compounds.
2. EPA responders on the ground have portable equipment that can detect any spikes in the levels of odor-causing compounds.
3. EPA's twin engine aircraft, ASPECT, was also deployed to collect air sampling data, specifically tasked to detect the presence of increased odors and sulfur dioxide resulting from the oil spill.
4. The state of Louisiana put additional monitors in place in recent days to further monitor the chemical levels in the air.
5. The Gulf Coast states have permanent stationary air monitors that are working to monitor general air quality. Over the next days and weeks of the response to the BP Spill, these monitoring stations will detect possible emissions of pollution from the fires associated with burning off the oil spill.

Is EPA doing anything to address the concerns of workers regarding effects of their potential exposure to oil or dispersants?

(we can check with JIC to see if this question has been posed in the context of other agencies and also fill in EPA's response)

Is drinking water affected?

The oil spill is not currently expected to affect drinking water. The closest drinking water intake in use in Southeastern Louisiana on the Mississippi River is 49 miles upstream from the mouth of the river. The oil is not expected to migrate that far upstream. Those who have any concerns about their water are being asked to contact their water utility.

Why is EPA sampling and monitoring the water?

EPA is tracking the prevalence of potentially harmful chemicals in the water as a result of this spill to determine the level of risk posed to fish and other wildlife. While these chemicals can impact ecosystems, drinking water supplies are not expected to be affected.

The oil itself can cause direct effects on fish and wildlife, for example when it coats the feathers of waterfowl and other types of birds. In addition, other chemical compounds can have detrimental effects. Monitoring information allows EPA to estimate the amount of these compounds that may reach ecological systems. When combined with available information on the toxicity of these compounds, EPA scientists can estimate the likely magnitude of effects on fish, wildlife, and human health.

How is EPA responding to requests from volunteers or others who have ideas about assisting in the response efforts?

EPA has published information on our website regarding submission of technology solutions. We also include information published by BP and others to direct volunteers to opportunities to assist in cleanup and community support efforts.

Use of Dispersants

How Does EPA Approve Dispersants for listing on the NCP Product Schedule?

EPA reviews dispersant applications from manufacturers to ensure that all the regulatory data requirements are met. Applications include information about handling and worker precautions, proper application procedures, and shelf life.

For dispersants, the manufacturer is required to perform laboratory testing for effectiveness and toxicity. The laboratories used by the manufacture to conduct any of the required tests must provide information on their lab and staff qualifications to ensure that data quality criteria are met.

Effectiveness: The effectiveness test results for the dispersant must be 45 percent or greater before the new product can be added to the Product Schedule.

Toxicity: There are 2 toxicity tests that must be performed for dispersants:

- 1) The first toxicity test exposes the inland silverside fish (*Menidia beryllina*) to oil and the dispersant for a total of 96 hours.
- 2) The second toxicity test exposes the mysid shrimp (*Mysidopsis bahia*) to oil and the dispersant for a total of 48 hours.

The tests are conducted on the dispersant and No. 2 fuel oil separately and then using a mixture of the dispersant and No. 2 fuel oil. At the end of the tests, an LC50 is calculated. The LC50 is the concentration required to kill half the members of a tested population after a specific period of time.

In addition to the toxicity tests performed, the dispersant must also undergo additional testing using standard American Society for Testing and Materials (ASTM) methods. Specifically, the dispersant is tested for flash point, pour point, viscosity, specific gravity and pH.

The dispersant is also tested for metals (including arsenic lead, cadmium chromium, copper, lead, mercury nickel, and zinc), cyanide and chlorinated hydrocarbons.

EPA thoroughly reviews the application and queries the manufacturer on any information that is insufficient or unclear.

When EPA is confident that all testing and data requirements have been met, the new product is listed on the NCP Product Schedule.

How do dispersants work on the water's surface?

Oil spill dispersants are chemicals applied directly to the spilled oil in order to break down the oil into small drops below on the surface.

Dispersants are usually applied to the slick with specialized equipment mounted on an airplane, helicopter or ship. Once applied, dispersants help break up oil into tiny micron-sized droplets which mix into the upper layer of the ocean.

Dispersed oil forms a “plume” or “cloud” of oil droplets just below the water surface. The dispersed oil mixes vertically and horizontally into the water column and is rapidly diluted. Bacteria and other microscopic organisms then act to quickly degrade the oil within the droplets.

Oil on calm water surfaces is often cohesive and natural degradation processes are slow. In heavy seas, however, the oil gets naturally dispersed into the surface waters.

It should be noted that oil released from the BP Oil Spill is also naturally dispersing into the water column due to the physical agitation of the wind, waves and vessel operations.

How do dispersants work under the water?

R2: The application of dispersants underwater is a novel approach BP is testing dispersants to break up the oil at the source of the leak before it rises to the surface. The Coast Guard and EPA authorized BP to conduct tests of this new approach and no further use of dispersants underwater is planned until BP provides the results of these tests for our review. The effects of underwater dispersant use on the environment are still widely unknown, which is why we are testing to determine its effectiveness first and foremost. If it is determined that the use of this dispersant underwater is effective and that BP may continue its use, the Federal government will require regular analysis of its impact on the environment, water and air quality, and human health. We reserve the right to discontinue the use of this dispersant method if any negative impacts on the environment outweigh the benefits.

How much aerial dispersant has been used to date on BP Oil Spill? Is BP is running out of dispersants?

R3: Currently As of May 11, the total dispersant used was approximately 440,000 gallons. There is no shortage of dispersants for use in response to the BP Oil Spill. For the latest information on the use and amount of dispersants used, go to www.deepwaterhorizonresponse.com

Have dispersants ever been used in such volume before?

While dispersants have been used in previous oil spills, this is the largest application of dispersants at an oil spill response in the United States. Since the spill occurred, EPA and its federal partners have closely monitored any potential impacts of the dispersant including air quality monitoring by both planes and through mobile and fixed locations. Results of EPA's air monitoring efforts currently do not show any risks to human health from dispersants. We have also developed a plan to monitor the surface and subsea use of dispersants. However that plan is evolving and we will continue to update the website. The plan is posted on the EPA web site at <http://www.epa.gov/bpspill/dispersants>

Some History of Dispersant Use:

- In the US, dispersants have been applied to much smaller spills off the coast of Louisiana and Texas over the last 15 years.
- At the IXTOC-I Well Blowout near Vera Cruz, Mexico in 1979, between 1 million and 2.5 million gallons of mostly Corexit dispersant products were applied over a five-month period on the oil discharge.
- In Australia last year, 50,000 gallons of dispersants were used on the 9 million gallon West Atlas oil platform spill in the northern Timor Sea.
- In the United Kingdom, dispersants are considered the first line of defense because of high seas and rugged coastlines. In 1996, 118,000 gallons of dispersants were used on the 20 million gallon Sea Empress oil spill in Wales.

What are the tradeoff considerations being weighed regarding the impact of fish and wildlife when making decisions about the subsea use of dispersants?

Dispersant in the deep ocean, the Federal government weighs the effectiveness of the dispersant in breaking down the oil at such depths, the benefits of preventing the oil from rising to the surface and eventually hitting the shore where it is likely to do significant damage to birds, wetlands and aquatic life, and the long term impacts of the dispersant mixed with oil in deeper waters. We have a monitoring and sampling plan in place to track the movement of the oil and we reserve the right to stop the use of these dispersants at any time based on the results.

Are any human health effects expected as a result of using the dispersants?

People working with dispersants are strongly advised to use a half face filter mask or an air-supplied breathing apparatus to protect their noses, throats, and lungs, and they should wear nitrile or PVC gloves, coveralls, boots, and chemical splash goggles to keep dispersants off skin and out of their eyes.

What effects, if any, does the use of dispersants have on marine life?

It's important to understand that the use of dispersants is an environmental trade-off. We know dispersants are generally less toxic than the oils they breakdown. We know that surface use of dispersants decreases the environmental risks to shorelines and organisms at the surface and when used this way, dispersants breakdown over several days.

However the long term effects on aquatic life are unknown, which is why EPA and the Coast Guard are requiring BP to implement a robust sampling and monitoring plan.

The federal response ensures that these operations are constantly monitored for any adverse effects that may outweigh the benefit of using dispersants.

How will we know the future and total effects on marine life of dispersant use?

It is too early in the process to know what the scope of the natural resource damage will be. Look to federal partners such as NOAA and DOI for information on impacts to fish, shellfish, marine mammals, turtles, birds and other sensitive resources as well as their habitats, including wetlands, beaches, mudflats, bottom sediments, corals and the water column.

Apart from marine life, has the Unified Command been able to make an assessment on the effects of the dispersant on the environment?

The harm or toxicity of dispersed oil in the environment is generally associated with the oil rather than with the dispersant alone. However, use of dispersants breaks up a slick of oil on the surface into smaller droplets that can go beneath the surface. When applied on the surface before spills reach the coastline, dispersants will potentially decrease exposure for surface-dwelling organisms (such as sea birds) and inter tidal species (such as mangroves and salt marshes), while increasing exposure to a smaller population of aquatic life found deeper in the water. It is unknown if dispersed oil has toxic implications to the human population because bioaccumulation through the food chain has not been evaluated.

To ensure nearby residents are informed and protected, the EPA is constantly monitoring air quality in the Gulf area through air monitoring air craft, and fixed and mobile air stations. EPA is also monitoring the water along the coast for indicators of water quality and toxicity to aquatic life. Following major oil spills, NOAA conducts annual damage assessments to determine and monitor long term effects on shoreline wildlife and spawning habitats.

The effects of deep water injection of dispersant on the environment are unknown, which is why we are testing to determine the effectiveness of this method of chemical dispersant

application. If it is determined to be effective and BP is authorized to continue its use, the federal government will require daily analysis of its impact on the environment, water and air quality, and human health. If analyses indicate that negative impacts on the environment outweigh the benefits, Unified Command reserves the right to discontinue or modify the use of this dispersant method.

How will the government ensure the protection of the environment when dispersants are used?

The authorization given to BP to use dispersants on surface oil stemming from the BP Oil Spill included specific conditions to ensure the protection of the environment and the health of residents in the affected areas. BP, through the Unified Command, continues to monitor the environment for effects of dispersant use. In addition, EPA is collecting air and water quality data daily.

Under the Oil Pollution Act, state, Tribal and federal Natural Resource Trustee agencies are responsible for assessing the injury, loss or destruction of natural resources due to spills. The trustees will also assess any lost human uses of these resources, for example, fishing, hunting, and beach recreational closures. The trustees are also assessing the efficacy of evaluating impacts from the response, including burning, and surface and sub surface dispersant use.

What are the future plans for use of dispersants for oil spills? Will the industry and federal government look to continue their use?

Generally, the use of dispersants is restricted under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Dispersants must be on the US EPA Product List, and Federal and state agencies have agreements establishing areas where rapid decisions on dispersants may be made by the Federal On –Scene Coordinators. For other areas outside those designated areas requires additional approval of additional agencies identified in the NCP.

The authorization given to BP to use the dispersant on oil present on the surface of the water included specific conditions to ensure the protection of the environment and the health of residents in affected areas. At this time, BP is authorized to continue use of this dispersant on the surface of the water. The Unified Command will continue to monitor for the effects of this dispersant on the environment and we reserve the right to discontinue its use.

The Coast Guard and EPA authorized BP to conduct tests of a new approach to use this dispersant underwater, at the source of the leak. The tests were done to determine if the dispersant would be effective in breaking up the oil and helping to control the leaks. No further use of dispersants underwater is planned until BP provides the results of these tests for review, the results are analyzed, a determination is made and ongoing monitoring and evaluation are in place.

Does EPA make a determination on the toxicity of dispersants before they are approved?

EPA requires toxicology tests and reports for all dispersants that are approved on the NCP Product Schedule, the authorized list of dispersants. All determinations regarding the specific application or use of a dispersant are made by the Federal On-Scene Coordinator in charge of the response.

Corexit is the type of dispersant being used. BP says they're using two different types. What's the difference? What can you tell us about the ingredients or chemical composition of the dispersants being used on the BP Oil Spill?

BP is using Corexit 9500A and 9527A. These dispersants perform the same function, but have different formulations. EPA posts information about all authorized dispersants on our NCP Product Schedule website at:

http://www.epa.gov/emergencies/content/ncp/product_schedule.htm

All the information EPA can make public about these dispersants can be found on the Product Schedule. However, you may notice that some of the ingredients are confidential. This is because the manufacturer chooses to keep this information proprietary, and as a result EPA is obligated by law to protect this information. However NALCO, the manufacturer of Corexit products can choose to make this information available.